

REMARKS

In the advisory action mailed February 20, 2008, the Examiner indicated that the Amendment after Final Rejection filed February 11, 2008 would be entered, but asserted that Amendment did not place the application in a condition for allowance. Applicant provides the present remarks in connection with a Request for Continued Examination in an effort to more particularly point out the invention.

Advisory Action

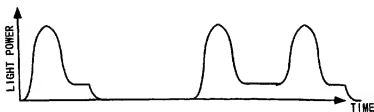
The Advisory Action dated February 11, 2008 argues that “the prior art reference selectively changes the modulation ‘duty ratio’ which in turn changes the modulation depth of *periodic modulation* of the intensity of the optical signal. As an example, Taga et al. (U.S. Patent No. 5,872,647) in fig 9 (see below) specifically and explicitly illustrates that the modulation depth (extinguish ration) (sic) varies as the duty ration (sic) pulse width changes.” *Advisory Action dated February 11, 2008 (Fig 9 from Taga omitted) (emphasis added).*

First, Taga is not cited as a prior art reference in rejecting any of the claims in the Official Action mailed January 31, 2008. Indeed, Applicants previously swore behind Taga thereby removing Taga as a prior art reference against the pending claims. It is understood, that under certain circumstances a reference may be used to indicate what would have been known to one of ordinary skill in the art even if the reference does not qualify as prior art. Applicants understand that Taga is cited for this purpose, and do not in anyway concede that Taga qualifies as prior art to the present claims.

Contrary to the assertions in the Advisory Action, Taga clearly does not teach that a periodic “modulation depth (extinguish ration) (sic) varies as the duty ration (sic) pulse width changes.” The extinction ratio is explicitly defined in Taga: “Here the extinction ratio is the power ratio between the *peak* and the *bottom of the RZ pulse*.” Col. 3, lines 25-26.

Any change in the extinction ratio of the RZ pulse in Taga is not shown or described as imparting any change in the depth of a “*periodic*” modulation of the intensity of the optical signal. FIG. 8 of Taga is described therein as an example of an embodiment where the RZ pulse is not “completely extinguished.” *Col. 4, lines 35-36*. As shown in FIG. 8, which is reproduced below, modification of the extinction ratio does not result or produce any change in the depth of a *periodic* modulation.

FIG. 8



Applicants respectfully submit, therefore, that one of ordinary skill in the art would not understand from Taga that changing the duty ratio of an RZ signal would result in a change in the depth of a *periodic* modulation of the signal.

The arguments made in Applicants “Response After Final Rejection” filed February 11, 2008 are repeated and incorporated herein by reference. In summary, however, there is nothing in any of the cited references that teaches or suggests to an “amplitude adjustment mechanism configured for *selectively adjusting a depth* of said *periodic modulation* of the intensity of said optical signal” (independent claim 1) or “*selectively adjusting a depth* of said *periodic amplitude modulation*” (independent claim 56). Again, the Official Action correctly concedes that this aspect of claim 1 is not shown in Sano. Schaffner is cited only for the proposition that a modulator can be configured to adjust modulation depth.

Ennsen devoid of anything that teaches or suggests a “*periodic modulation*” in addition to a data modulation or any mechanism for selectively adjusting the modulation depth of the “*periodic modulation*.” Again, the Official Action concedes that Sano does not teach the claimed “adjustment mechanism”, and Schaffner does not teach, and is not cited as teaching, the claimed “adjustment mechanism.” Neither Applicant’s admitted

prior art, Meissner, Kitajima, and Takayama do not appear to provide the missing teachings and are not believed to be cited as such.

Clearly, therefore, the combination of references fails to teach or suggest all the limitations of the claims. There is no combination of these references that one could make to achieve the claimed invention. The claimed invention could not, therefore, have been obvious from the cited references at the time it was made.

Even if the references could be combined to achieve the claimed invention, the Official Action sets forth no actual evidence or knowledge that would have motivated one of ordinary skill in the art to modify Sano with the RZ modulation format of Ennser to achieve the claimed amplitude adjustment mechanism for “selectively adjusting *a depth* of said *periodic modulation* of the intensity of said optical signal.” It is respectfully submitted, therefore, that the Official Action fails to set forth a *prima facie* case of obviousness.

Moreover, the “Conclusion” of both Sano and Ennser is that the RZ format is superior to NRZ. *See Sano, page 1695 and Ennser page 358.* Considering that both Sano and Ennser extol the virtues of the RZ format, the teachings of these references would have led one of ordinary skill in the art *away from the claimed invention*, which is essentially a tradeoff between RZ and NRZ modulation formats. As shown in FIG. 5, for example, use of a modulation depth of less than 100% in a system consistent with the claimed invention results in a performance *improvement over the pure RZ formats* described in Sano and Ennser. Moreover, the format can allow for narrower channel spacing in wavelength division multiplexed (WDM) systems since it can require less bandwidth.

Sano and Ennser mention none of these advantages, and instead advocate use of a pure RZ modulated signal which is *inferior to* modulation imparted in a system consistent with the claimed invention, as described for example in connection with FIG. 5. Only through hindsight, after reading the present specification, would one consider modifying the RZ formats of Sano and Ennser to provide a tradeoff between modulation formats

achieved using the claimed invention. Of course, such hindsight analysis cannot be used in support of an obviousness rejection.

Having dealt with all the objections raised by the Examiner, it is respectfully submitted that the present application, as amended, is in condition for allowance. Thus, early allowance is earnestly solicited.

Request for Interview Prior to First Office Action

In the event the Examiner continues to disagree with Applicant's position, Applicant respectfully request that the Examiner grant a telephonic interview with the undersigned prior to issuance of a first office action.

If the Examiner desires personal contact for further disposition of this case, the Examiner is invited to call the undersigned Attorney at 603.668.6560. In the event there are any fees due, please charge them to our Deposit Account No. 50-2121.

Respectfully submitted,

By: /Donald J. Perreault/
Donald J. Perreault
Reg. No. 40,126